	English/Language Arts	Mathematics	Social Studies
ACTIVITY			
Adventures In Density (25)	5.2.4		
Aqua Bodies (63)		5.1.4, 5.2.4	
Poison Pump (93)	5.2.2, 5.2.4		
Salt Marsh Players (99)	5.5.6		
Water Address (122)	5.1.1, 5.2.4		
Geyser Guts (144)		5.5.6	
Imagine (157)	5.4.3, 5.5.6		
The Incredible Journey (161)	5.4.3, 5.5.6		
Old Water (171)			5.3.11
Piece It Together (174)	5.1.1, 5.2.4		5.3.1, 5.3.5
Poetic Precipitation (182)	5.5.6		
The Thunderstorm (196)	5.5.6		
Common Water (232)			5.2.9, 5.5.1
A Drop In The Bucket (238)		5.1.4	5.3.4, 5.5.1
Irrigation Interpretation (254)	5.7.1, 5.7.3		5.3.11
Sum of The Parts (267)	5.7.6		
Water Meter (271)		5.1.7, 5.3.7	

Water Works (274)			5.3.8
AfterMath (289)	5.2.1, 5.4.3, 5.5.3, 5.7.5, 5.7.10	5.7.1	5.3.3, 5.3.11
Back To the Future (293)		5.3.7, 5.6.2, 5.7.1	5.5.6
Every Drop Counts (307)	5.2.1	5.1.7, 5.3.7	5.2.9, 5.2.11
Macroinvertebrate Mayhem (322)	5.5.3		
Money Down The Drain (328)		5.7.1, 5.7.7	
Reaching Your Limits (344)		5.1.4, 5.1.5	
Cold Cash In the Icebox (373)		5.5.6, 5.7.1	5.4.3, 5.5.6
Easy Street (382)	5.2.1, 5.2.4	5.5.5, 5.7.1, 5.7.4	5.5.1, 5.5.6
Pass The Jug (392)			5.2.9, 5.3.4
Water Bill Of Rights (403)	5.4.3, 5.5.6		
Water Concentration (407)	5.2.4, 5.5.6		5.3.2, 5.3.5, 5.5.6
Water Crossing (421)	5.2.4, 5.4.2, 5.5.1		5.3.2, 5.3.3
Raining Cats And Dogs (435)	5.1.5, 5.3.5		
Water Write (457)	5.5.6		

Grade 5

Standard 1
READING: Word Recognition, Fluency, and Vocabulary Development

Students use their knowledge of word parts and word relationships, as well as context clues (the meaning of the text around a word), to determine the meaning of specialized vocabulary and to understand the precise meaning of grade-level-appropriate words.

Decoding and Word Recognition

5.1.1 Read aloud grade-level-appropriate narrative text (stories) and expository text (information) fluently and accurately and with appropriate timing, changes in voice, and expression.

WET Activities (page): 122, 174

Vocabulary and Concept Development

5.1.5 Understand and explain the figurative use of words in similes (comparisons that use *like* or *as*: *The stars were like a million diamonds in the sky.*) and metaphors (implied comparisons: *The stars were brilliant diamonds in the night sky.*).

WET Activities (page): 435

Standard 2
READING: Comprehension (Focus on Informational Materials)

Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in the **Indiana Reading List** *(available online at www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 5, in addition to regular classroom reading, students read a variety of grade-level-appropriate narrative (story) and expository (informational and technical) text, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.*

Structural Features of Informational and Technical Materials

5.2.1 Use the features of informational texts, such as formats, graphics, diagrams, illustrations, charts, maps, and organization, to find information and support understanding.
Example: Locate specific information in a social studies textbook by using its organization, sections on different world regions, and textual features, such as headers, maps, and charts.

WET Activities (page): 289, 307, 382

5.2.2 Analyze text that is organized in sequential or chronological order.

WET Activities (page): 93

Comprehension and Analysis of Grade-Level-Appropriate Text

5.2.4 Draw inferences, conclusions, or generalizations about text and support them with textual evidence and prior knowledge.
Example: After reading *Rosa Parks: My Story* by Rosa Parks, compare life today with life during the time of Rosa Parks' story, supporting the comparison with ideas from the text and from experience or other outside sources.

WET Activities (page): 25, 93, 122, 174, 382, 407, 421

Standard 3
READING: Literary Response and Analysis

Students read and respond to grade-level-appropriate historically or culturally significant works of literature. They begin to find ways to clarify the ideas and make connections between literary works. The selections in the **Indiana Reading List** *(available online at www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students.*

Narrative Analysis of Grade-Level-Appropriate Text

5.3.5 Describe the function and effect of common literary devices, such as imagery, metaphor, and symbolism.

Symbolism: the use of an object to represent something else; for example, a dove might symbolize peace.

Imagery: the use of language to create vivid pictures in the reader's mind.

Metaphor: an implied comparison in which a word or phrase is used in place of another, such as *He was drowning in money*.

WET Activities (page): 435

Standard 4
WRITING: Process

Students discuss and keep a list of ideas for writing. They use graphic organizers. Students write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

Organization and Focus

5.4.2 Write stories with multiple paragraphs that develop a situation or plot, describe the setting, and include an ending.

WET Activities (page): 421

5.4.3 Write informational pieces with multiple paragraphs that:

present important ideas or events in sequence or in chronological order.

provide details and transitions to link paragraphs.

offer a concluding paragraph that summarizes important ideas and details.

WET Activities (page): 157, 161, 289, 403

Standard 5
WRITING: Applications (Different Types of Writing and Their Characteristics)

At Grade 5, students write narrative (story), expository (informational), persuasive, and descriptive texts (of at least 500 words). Student writing demonstrates a command of Standard English and the research, organizational, and drafting strategies outlined in Standard 4 — Writing Process. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

In addition to producing the different writing forms introduced in earlier grades, such as letters, Grade 5 students use the writing strategies outlined in Standard 4 — Writing Process to:

5.5.1 Write narratives (stories) that:

establish a plot, point of view, setting, and conflict.

show, rather than tell, the events of the story.

Example: Write a story, modeling the style of the story after a type of writing recently read in class, such as a folktale, myth, mystery, or science fiction story. Include an interesting beginning that establishes the central conflict of the story and an ending that resolves the problem.

WET Activities (page): 421

5.5.3 Write research reports about important ideas, issues, or events by using the following guidelines:

Frame questions that direct the investigation.

Establish a main idea or topic.

Develop the topic with simple facts, details, examples, and explanations.

Use a variety of information sources, including firsthand interviews, reference materials, and electronic resources, to locate information for the report.

Example: After talking to local officials and conducting library research, write about the history of the different people and immigrant groups who settled in Indiana. Prepare a class book on *The History of Indiana* that includes information about where these groups came from, where they first lived in the state, and what work they did.

WET Activities (page): 289, 322

5.5.6 Write for different purposes and to a specific audience or person, adjusting tone and style as appropriate.

Example: Write a skit or an episode of a puppet show to present at your class talent show. Use funny words and phrases to make the audience laugh.

WET Activities (page): 99, 157, 161, 182, 196, 403, 407, 457

.

Standard 7
LISTENING AND SPEAKING: Skills, Strategies, and Applications

Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

Comprehension

5.7.1 Ask questions that seek information not already discussed.

WET Activities (page): 254

5.7.3 Make inferences or draw conclusions based on an oral report.

WET Activities (page): 254

Organization and Delivery of Oral Communication

5.7.5 Clarify and support spoken ideas with evidence and examples.

WET Activities (page): 289

5.7.6 Use volume, phrasing, timing, and gestures appropriately to enhance meaning.

WET Activities (page): 267

Speaking Applications

5.7.10 Deliver informative presentations about an important idea, issue, or event by the following means:

frame questions to direct the investigation.

establish a controlling idea or topic.

develop the topic with simple facts, details, examples, and explanations.

WET Activities (page): 289

Grade 5

In this technological age, mathematics is more important than ever. When students leave school, they are more and more likely to use mathematics in their work and everyday lives — operating computer equipment, planning timelines and schedules, reading and interpreting data, comparing prices, managing personal finances, and completing other problem-solving tasks. What they learn in mathematics and how they learn it will provide an excellent preparation for a challenging and ever-changing future.

The state of Indiana has established the following mathematics standards to make clear to teachers, students, and parents what knowledge, understanding, and skills students should acquire in Grade 5:

Standard 1 — Number Sense

Understanding the number system is the basis of mathematics. Students extend their understanding of the magnitudes of numbers to rounding whole numbers and decimals to any place value. They order and compare whole numbers and decimals using the correct symbols for greater than and less than. They develop the concept of percentage as parts of a hundred and compare different ways of looking at fractions. They identify whole numbers as prime or composite, and they compare fractions, decimals, and mixed numbers on a number line.

Standard 2 — Computation

Fluency in computation is essential. Students extend the standard methods for multiplying and dividing to larger numbers. They add and subtract more complex fractions and decimals, learning how these different representations of numbers can be manipulated. They also develop an understanding of how to multiply and divide fractions.

Standard 3 — Algebra and Functions

Algebra is a language of patterns, rules, and symbols. Students at this level develop further the fundamental concept of a variable — having a letter stand for all numbers of a certain kind. They use this to write simple algebraic expressions and to evaluate them. They begin to develop the idea of linking an algebraic equation to a graph, by finding ordered pairs that fit a linear equation, plotting these as points on a grid, and drawing the resulting straight line. They also interpret graphs to answer questions.

Standard 5 — Measurement

The study of measurement is essential because of its uses in many aspects of everyday life. Students develop and use the formulas for calculating perimeters and areas of triangles, parallelograms, and trapezoids. They extend these ideas to finding the volume and surface area of rectangular solids. They understand and use additional units for measuring weight: ounce, gram, and ton. They also add and subtract with money in decimal notation.

Standard 6 — Data Analysis and Probability

Data are all around us — in newspapers and magazines, in television news and commercials, in quality control for manufacturing — and students need to learn how to understand data. At this level, they use the mean, median, mode, and range to describe data sets. They further develop the concept of probability, recording probabilities as fractions between 0 and 1 and linking these to levels of certainty about the events described.

Standard 7 — Problem Solving

In a general sense, mathematics is problem solving. In all of their mathematics, students use problem-solving skills: they choose how to approach a problem, they explain their reasoning, and they check their results. As they develop their skills with algebra, geometry, or measurement, for example, students move from simple to more complex ideas by taking logical steps that build a better understanding of mathematics.

As part of their instruction and assessment, students should also develop the following learning skills by Grade 12 that are woven throughout the mathematics standards:

Communication

The ability to read, write, listen, ask questions, think, and communicate about math will develop and deepen students' understanding of mathematical concepts. Students should read text, data, tables, and graphs with comprehension and understanding. Their writing should be detailed and coherent, and they should use correct mathematical vocabulary. Students should write to explain answers, justify mathematical reasoning, and describe problem-solving strategies.

Reasoning and Proof

Mathematics is developed by using known ideas and concepts to develop others. Repeated addition becomes multiplication. Multiplication of numbers less than ten can be extended to numbers less than one hundred and then to the entire number system. Knowing how to find the area of a right triangle extends to all right triangles. Extending patterns, finding even numbers, developing formulas, and proving the Pythagorean Theorem are all examples of mathematical reasoning. Students should learn to observe, generalize, make assumptions from known information, and test their assumptions.

Representation

The language of mathematics is expressed in words, symbols, formulas, equations, graphs, and data displays. The concept of one-fourth may be described as a quarter, $\frac{1}{4}$, one divided by four, 0.25, $\frac{1}{8} + \frac{1}{8}$, 25 percent, or an appropriately shaded portion of a pie graph. Higher-level mathematics involves the use of more powerful representations: exponents, logarithms, π, unknowns, statistical representation, algebraic and geometric expressions. Mathematical operations are expressed as representations: +, =, divide, square. Representations are dynamic tools for solving problems and communicating and expressing mathematical ideas and concepts.

Connections

Connecting mathematical concepts includes linking new ideas to related ideas learned previously, helping students to see mathematics as a unified body of knowledge whose concepts build upon each other. Major emphasis should be given to ideas and concepts across mathematical content areas that help students see that mathematics is a web of closely connected ideas (algebra, geometry, the entire number system). Mathematics is also the common language of many other disciplines (science, technology, finance, social science, geography) and students should learn mathematical concepts used in those disciplines. Finally, students should connect their mathematical learning to appropriate real-world contexts.

Standard 1
Number Sense

Students compute with whole numbers, decimals, and fractions and understand the relationship among decimals, fractions, and percents. They understand the relative magnitudes of numbers. They understand prime* and composite* numbers.*

5.1.4 Interpret percents as a part of a hundred. Find decimal and percent equivalents for common fractions and explain why they represent the same value.
Example: Shade a 100-square grid to show 30%. What fraction is this?

WET Activities (page): 63, 238, 344

5.1.5 Explain different interpretations of fractions: as parts of a whole, parts of a set, and division of whole numbers by whole numbers.
Example: What fraction of a pizza will each person get when 3 pizzas are divided equally among 5 people?

WET Activities (page): 344

5.1.7 Identify on a number line the relative position of simple positive fractions, positive mixed numbers, and positive decimals.
Example: Find the positions on a number line of $1\frac{1}{4}$ and 1.4.

* whole number: 0, 1, 2, 3, etc.
* prime number: a number that can be evenly divided only by 1 and itself (e.g., 2, 3, 5, 7, 11)
* composite number: a number that is not a prime number (e.g., 4, 6, 8, 9, 10)

WET Activities (page): 271, 307

Standard 2
Computation

Students solve problems involving multiplication and division of whole numbers and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals.

5.2.1 Solve problems involving multiplication and division of any whole numbers.
Example: $2{,}867 \times 34 = ?$. Explain your method.

WET Activities (page): 328

5.2.4 Multiply and divide fractions to solve problems.
Example: You have $3\frac{1}{2}$ pizzas left over from a party. How many people can have $\frac{1}{4}$ of a pizza each?

WET Activities (page): 63

Standard 3
Algebra and Functions

Students use variables in simple expressions, compute the value of an expression for specific values of the variable, and plot and interpret the results. They use two-dimensional coordinate grids to represent points and graph lines.

5.3.7 Use information taken from a graph or equation to answer questions about a problem situation.

Example: The speed (v feet per second) of a car t seconds after it starts is given by the formula $v = 12t$. Find the car's speed after 5 seconds.

* distributive property: e.g., $3(5 + 2) = (3 \times 5) + (3 \times 2)$

WET Activities (page): 271, 293, 307

Standard 5
Measurement

Students understand and compute the areas and volumes of simple objects, as well as measuring weight, temperature, time, and money.

5.5.5 Understand and use the smaller and larger units for measuring weight (ounce, gram, and ton) and their relationship to pounds and kilograms.
Example: How many ounces are in a pound?

WET Activities (page): 382

5.5.6 Compare temperatures in Celsius and Fahrenheit, knowing that the freezing point of water is 0°C and 32°F and that the boiling point is 100°C and 212°F.
Example: What is the Fahrenheit equivalent of 50°C? Explain your answer.

WET Activities (page): 144, 373

Standard 6
Data Analysis and Probability

Students collect, display, analyze, compare, and interpret data sets. They use the results of probability experiments to predict future events.

5.6.2 Find the mean*, median*, mode*, and range* of a set of data and describe what each does and does not tell about the data set.
Example: Find the mean, median, and mode of a set of test results and describe how well each represents the data.

WET Activities (page): 293

Standard 7
Problem Solving

Students make decisions about how to approach problems and communicate their ideas.

5.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.
Example: Solve the problem: "When you flip a coin 3 times, you can get 3 heads, 3 tails, 2 heads and 1 tail, or 1 head and 2 tails. Find the probability of each of these combinations." Notice that the case of 3 heads and the case of 3 tails are similar. Notice that the case of 2 heads and 1 tail and the case of 1 head and 2 tails are similar.

WET Activities (page): 289, 293, 328, 373, 382

Students use strategies, skills, and concepts in finding and communicating solutions to problems.

5.7.4 Express solutions clearly and logically by using the appropriate mathematical terms and notation. Support solutions with evidence in both verbal and symbolic work.
Example: In the first example, make a table or tree diagram to show another student what is happening.

WET Activities (page): 382

5.7.7 Make precise calculations and check the validity of the results in the context of the problem.
Example: A recipe calls for $\frac{3}{8}$ of a cup of sugar. You plan to double the recipe for a party and you have only one cup of sugar in the house. Decide whether you have enough sugar and explain how you know.

WET Activities (page): 328

GRADE 5

The United States – The Founding of the Republic

Students in Grade 5 study the United States focusing on the influence of physical and cultural environments on national origins, growth, and development up to 1800. Emphasis should be placed upon study of American Indian cultures, European exploration, colonization, settlement, revolution against British rule, the founding of the Republic, and the beginnings of the United States.

The Indiana's K – 8 academic standards for social studies are organized around five content areas. The content area standards and the types of learning experiences they provide to students in Grade 5 are described below. On the pages that follow, age-appropriate concepts are listed underneath each standard. Skills for thinking, inquiry, and participation in a democratic society are integrated throughout. Specific terms are defined and examples are provided when necessary.

Standard 2 — Civics and Government
Students will identify main components and characteristics of the United States government. They will identify and explain key ideas in government from the colonial and founding periods that continue to shape civic and political life.

Standard 3 — Geography
Students will describe Earth/sun relationships and the global grid system. They will identify major physical and cultural characteristics of the United States and its regions and name and locate the major physical features of each of the states and major cities of the United States. They will also explain the changing interaction of people with their environment in regions of the United States and show how the United States is related geographically to the rest of the world.

Standard 4 — Economics
Students will describe the productive resources and market relationships that influence the way people produce goods and services and earn a living in the United States in different historical periods.

Standard 5 — Individuals, Society, and Culture
Students will identify individuals and groups that have contributed to the development of the United States, investigate the way that individuals and groups cooperate to adapt to the environment and resolve conflicts, and examine the challenges faced and the contributions made by various cultural groups to American society.

Standard 2
Civics and Government

Students will identify main components and characteristics of the United States government. They will identify and explain key ideas in government from the colonial and founding periods that continue to shape civic and political life.

Roles of Citizens

5.2.9 Demonstrate civic responsibility in group and individual actions, including civic dispositions — such as civility, cooperation, respect, and responsible participation.

WET Activities (page): 232, 307, 392

5.2.11 Use a variety of information resources* to identify and evaluate contemporary issues that involve civic responsibility, individual rights, and the common good.

* public agenda: what the public needs and wants with respect to government action
* information resources: print media, such as books, magazines, and newspapers; electronic media, such as radio, television, Web sites, and databases; and community resources, such as individuals and organizations

WET Activities (page): 307

Standard 3
Geography

Students will describe Earth/sun relationships and the global grid system. They will identify major physical and cultural characteristics of the United States and its regions and name and locate the major physical features of each of the states and major cities of the United States. They will also explain the changing interaction of people with their environment in regions of the United States and show how the United States is related geographically to the rest of the world.

The World in Spatial Terms

5.3.1 Demonstrate that lines of latitude and longitude are measured in degrees of a circle, that places can be precisely located where these lines intersect, and that location can be stated in terms of degrees north or south of the equator and east or west of the prime meridian.

WET Activities (page): 174

Places and Regions

5.3.2 Name and locate states, major cities, major regions, major rivers, and mountain ranges in the United States.

WET Activities (page): 407, 421

5.3.3 Compare the locations of cities today with American Indian and colonial settlements and suggest reasons for the locations of these places, such as near bodies of water, on a lowland, along a transportation route, and near natural resources or sources of power.
Example: Use geography software to show bodies of water and roads. Use Internet and other reference materials to locate early and modern cities.

WET Activities (page): 289, 421

Physical Systems

5.3.4 Locate the continental divide and the major drainage basins in the United States.

WET Activities (page): 238, 392

5.3.5 Map and describe the characteristics of climate regions of the United States.
Example: Distinguish between the moist eastern part of the United States and the drier western part. Explain how mountain ranges cut off moisture from specific regions.

WET Activities (page): 174, 407

Human Systems

5.3.8 Identify the major manufacturing and agricultural regions in colonial America and cite ways that agriculture and manufacturing have changed in the past and continue to change.

WET Activities (page): 274

Environment and Society, Uses of Geography

5.3.11 Give examples of how specific physical features influenced historical events and movements.

WET Activities (page): 171, 254, 289

Standard 4
Economics

Students will describe the productive resources and market relationships that influence the way people produce goods and services and earn a living in the United States in different historical periods.

5.4.3 Trace the development of technology and the impact of major inventions on business productivity during the early development of the United States.

WET Activities (page): 373

Standard 5
Individuals, Society, and Culture

Students will identify individuals and groups that have contributed to the development of the United States, investigate the way that individuals and groups cooperate to adapt to the environment and resolve conflicts, and examine the challenges faced and the contributions made by various cultural groups to American society.

5.5.1 Describe basic needs that individuals have in order to survive — such as the need for food, water, shelter, and safety — and give examples of how people in early America adapted* to meet basic needs.
Example: American Indian groups and early European settlers developed housing, clothing styles, and materials depending upon what was available in the local environment. Living and working in groups made it easier to build houses, hunt, and grow food for crops. People also live in groups today to meet basic and other needs.

WET Activities (page): 232, 238, 382

5.5.6 Read accounts of how scientific and technological innovations have affected the way people lived in the early United States and make predictions about how future scientific and technological developments may change cultural life.

* adaptation: the way people change behavior to meet their needs in a changing environment
* community: a group of people (or groups of people) who often live close together and have similar interests or goals

WET Activities (page): 293, 373, 382, 407